

WHAT IS CLAIMED IS:

- 1 1. A process for the preparation of a robust microfluidics device
2 having at least one interconnect, comprising:
3 positioning at least one elastomeric portion onto a rigid substrate, said
4 elastomeric portion containing, or said elastomeric portion defining together with
5 said substrate, at least one fluid passage;
6 providing at least one interconnect to said elastomeric portion;
7 encapsulating said elastomeric portion(s) and said interconnect(s) with
8 a curable resin which exhibits volumetric contraction upon curing, said resin
9 surrounding said elastomer portion and at least a portion of said substrate; and
10 curing said curable resin to provide an encapsulated microfluidics
11 device, whereby said curable resin presses said elastomeric portion against said
12 substrate.
- 1 2. The process of claim 1 wherein said substrate is glass.
- 1 3. The process of claim 1 wherein said interconnect is a fluid
2 supply tubing or fluid receiving tubing.
- 1 4. The process of claim 1 wherein said interconnect is a fiber
2 optical cable.
- 1 5. The process of claim 1 wherein at least two fluid supply
2 and/or fluid receiving tubing interconnects are present.
- 1 6. The process of claim 1 wherein said encapsulating resin is a
2 transparent resin.
- 1 7. The process of claim 1 wherein said encapsulating resin is an
2 epoxy resin.

1 8. The process of claim 1 wherein said substrate and said
2 elastomeric portions are located within a cavity in a frame, and said encapsulating
3 resin is introduced into said cavity.

1 9. The process of claim 8 wherein said frame is a two-part
2 frame.

1 10. A microfluidics device prepared by the process of claim 1.

1 11. A microfluidics device prepared by the process of claim 2.

1 12. A microfluidics device prepared by the process of claim 3.

1 13. A microfluidics device prepared by the process of claim 4.

1 14. A microfluidics device prepared by the process of claim 5.

1 15. A microfluidics device prepared by the process of claim 6.

1 16. A microfluidics device prepared by the process of claim 7.

1 17. A microfluidics device prepared by the process of claim 8.

1 18. A microfluidics device prepared by the process of claim 9.

1 19. A microfluidics device prepared by the process of claim 1,
2 wherein metal tubing interconnects which protrude from the encapsulated device in
3 a defined configuration adapted to be inserted into correspondingly configured fluid
4 supply lines are in fluid communication with one or more microfluidic passages in
5 said device.